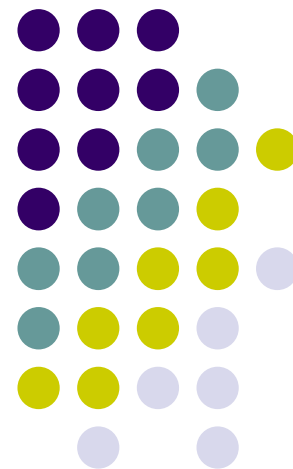


# Health Disparities or Measurement Disparities?

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# Valued Collaborators

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# Research Goals



- Examine race/ethnic variability in the processing of health survey questions
  - Determine if relationship is moderated by survey question formats
- Investigate degree to which race/ethnic variability in survey question processing is mediated by cultural values
- Investigate degree to which variability in reporting health status is moderated by cultural differences in question processing

# Summary of Working Hypotheses

## Question Level Characteristics

- Type of judgment
- Response format
- Qualified judgment
- Topic (physical or mental health)
- Self or proxy reporting
- Context dependency
- Question length
- Language complexity
- Concepts abstract or concrete
- Sensitivity or threat

## Respondent Level Characteristics

- Race/Ethnicity/Language
- Age
- Health beliefs
- Education
- Gender

## Individual Differences

- Cultural values
- Need for closure
- Need for cognition
- Need for evaluation

**Acculturation** (Korean-American and Mexican-American respondents only)

## Health Status

## Question Difficulties

- (Verbal & nonverbal behaviors, response latencies, debriefing problems)
- Comprehension
  - Memory retrieval
  - Mapping
  - Social desirability

## Socially Desirable Responding

## Response Effects

- Extreme response style
- Acquiescence
- Non differentiation
- No opinion responding
- Response order effects

$Q_5$

$Q_6$

$Q_4$

$Q_1-Q_2$

$Q_1-Q_7$

$Q_1$

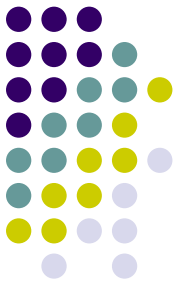
$Q_3$

$Q_{13}$

$Q_1-Q_8$   
 $Q_1-Q_9$   
 $Q_1-Q_{10}$   
 $Q_1-Q_{11}$   
 $Q_1-Q_{12}$

: Variables measured at item-response level

: Variables are measured at person level



# Data Collection

- Standardized laboratory interviews
- Questionnaire contents randomized
- Subjects recruited via RDD
- Interviews digitally audio & video recorded
- Response latencies recorded
- Biomedical measurements
- \$40 incentive

# Race/Ethnic Groups Sampled



- African Americans (U.S.-born)
- Mexican Americans
  - Primarily English speaking
  - Primarily Spanish speaking
- Korean Americans
  - Primarily English speaking
  - Primarily Korean speaking
- Non-Hispanic whites (U.S.-born)

# Health Question Sources



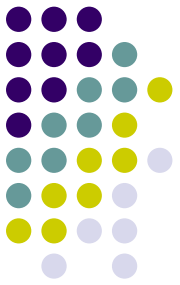
- Behavioral Risk Factor and Surveillance System (BRFSS)
- CAGE Alcohol Abuse Screening Instrument
- Consumer Assessment of Health Plans Surveys (CAHPS)
- California Health Interview Survey (CHIS)
- General Health Questionnaire (GHQ)
- Health Information National Trends Survey (HINTS)
- Secondary Injury Control and Risk Survey (ICARIS)
- Medical Expenditure Panel Survey (MEPS)
- National Comorbidity Survey-Revised (NCSR)
- National Health and Nutrition Examination Survey (NHANES)
- National Health Interview Survey (NHIS)
- NORC Sex Survey 1994
- National Survey of Drug Use & Health (NSDUH)
- National Survey of Family Life (NSFL)
- National Survey of Personal Health Practices and Consequences (NSPHPC)
- Short Form 12 Health Survey (SF-12)
- Survey of Health Related Behaviors Among Military Personnel (SHRBAMP)

# Question Design Dimensions Manipulated Within Subjects

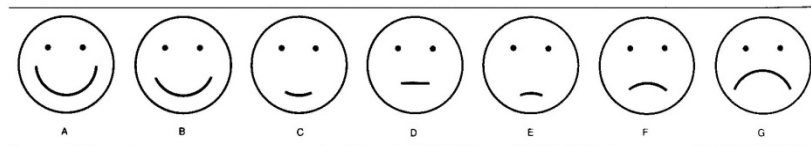


1. Question topic: physical vs. mental health
2. Type of judgment
  - subjective
  - self-relevant knowledge (general)
  - self-relevant knowledge (behavior specific)
3. Time-qualified vs. nonqualified judgments
4. Self vs. proxy reports
5. Response format

# Question Response Formats



1. Yes-no
2. Numeric – estimations
3. Numeric – date recalls
4. Verbal labels –  
categorical
5. Verbal labels – unipolar
6. Verbal labels – bipolar
7. Semantic differential
8. Faces scale



# Additional Question Characteristics Being Examined



- Question length
- Language complexity (Fleisch-Kincaid)
- Question abstraction
- Question sensitivity

# Measures of Cognitive Processing Difficulties



- Verbal behaviors
  - Respondent & interviewer
- Nonverbal behaviors
  - Respondent & interviewer
- Response latencies
- Debriefing probes

## Examples of Audio Respondent Behavior Interaction Codes



### Codes Used to Identify Comprehension Problems

**Clarification (unspecified):** respondent indicates uncertainty about question, but it is unclear as to whether the problem is related to the construct or the context.

**Clarification (construct):** respondent asks for repeat or clarification of question or makes a statement indicating uncertainty about question meaning (e.g., “what do you mean by depressed?”).

**Clarification (time frame):** respondent indicates uncertainty about the question's time frame.

**Clarification (context):** respondent indicates s/he understands the meaning of the construct but indicates uncertainty about question meaning within the context of the question as stated (e.g., “what do you want to know about being depressed?”).

**Clarification (rewording):** respondent rephrases the question before answering.

### Codes Used to Identify Memory Retrieval Problems

**Memory difficulty:** respondent gives answer but expresses concern about accuracy of memory or difficulty remembering.

**Making inferences:** respondent indicates that they are estimating or guessing an answer to a specific question based on what they “usually do” or “must have done.”

**Qualified answer (general):** respondent gives answer that meets question objective, but answer is qualified to indicate uncertainty about accuracy (includes “DK” followed by response).

### Codes Used to Identify Mapping Problems

**Clarification (response format):** respondent indicates uncertainty about the format for responding.

**Inadequate answer (general):** respondent gives answer that does not meet question objective.

**Imprecise response (general):** respondent gives answer that only partially meets question objective (e.g., “well over 10 times,” “at least twice”).

**Imprecise response (different response option):** respondent gives answer that does not use the response options provided with the question (e.g., “not so good health” instead of excellent, very good, good, fair or poor).

**Imprecise response (range):** respondent answers question with a range rather than a single number.

### Codes Used to Identify Social Desirability Problems

**Anonymity/confidentiality:** respondent answers question but expresses concern about anonymity or privacy of response.

**Refusal to answer:** respondent refuses to answer question for reasons of privacy or anonymity.

**Refusal to answer:** respondent refuses to answer question for some other reason (please record reason).

**Refusal to answer:** respondent refuses to answer question but does not give reason.

### Other Behavior Codes

**No problems identified:** respondent indicates no problems with the question as it is initially read.

**Interruption with answer:** respondent interrupts initial question reading with answer.

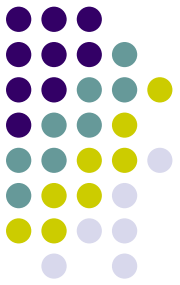
**Prior answer:** respondent or interviewer indicates that the answer was volunteered prior to the question being asked.

**Corrected answer:** respondent changes answer.

**Don't know:** respondent gives a “don't know” or equivalent answer (no other answer given).

**Missing data:** question cannot be heard on recording.

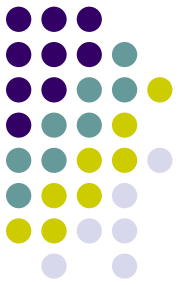
**Not applicable:** question was skipped appropriately.



# Response Effects Measures

- Acquiescence
- Extreme response style (Greenleaf, 1992)
- Non-differentiation
- No-opinion responding

# Individual Differences Measures



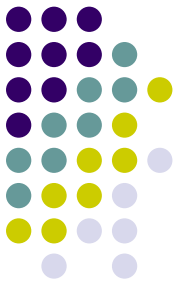
- Cultural orientations (Singelis, 1995; Schwartz, 1992)
- Social desirability (Paulhus, 1984)
- Need for cognition (Petty & Kao, 1984)
- Need to evaluate (Jarvis & Petty, 1996)
- Need for closure (Kruglanski et al, 1997)
- Acculturation (Marin & Marin, 1992)
- Health beliefs (Wallston et al, 1978)

# Validation Measures



- Inclusion of intentionally difficult survey questions
- Objective health assessments
  - Asthma/COPD (peak respiratory flow)
  - Diabetes (serum creatine & glucose)
  - Hypertension (blood pressure)
  - Obesity (height/weight)

# Analyses – Multi-level Modeling



## **Level-1 Model (response-level):**

Comprehension Difficulty<sub>ij</sub> =  $\beta_0 + \beta_1(\text{Judgment Type: Attitude}) + \beta_2(\text{Judgment Type: Behavior}) + \beta_3(\text{Response Format: Yes/No}) + \beta_4(\text{Response Format: Verbal-categorical}) + \beta_5(\text{Response Format: Verbal-unipolar}) + \beta_6(\text{Response Format: Verbal-bipolar}) + \beta_7(\text{Time Qualified}) + \beta_8(\text{Topic: Physical health}) + \beta_9(\text{Type of Report: Proxy reporting}) + \beta_{10}(\text{Question Length}) + \beta_{11}(\text{Question Length}) + \beta_{12}(\text{Language Complexity}) + \beta_{13}(\text{Abstraction Level}) + \beta_{10}(\text{Question Sensitivity}) + r_0$

## **Level-2 Model (person-level):**

$\beta_0 = \gamma_{00} + \gamma_{01}(\text{Education}) + \gamma_{02}(\text{Income}) + \gamma_{03}(\text{Age}) + \gamma_{04}(\text{Male}) + \gamma_{05}(\text{African American}) + \gamma_{06}(\text{Mexican American in English}) + \gamma_{07}(\text{Mexican American in Spanish}) + \gamma_{08}(\text{Korean American in English}) + \gamma_{09}(\text{Korean American in Korean}) + \mu_0$

# Results to be reported at future CSDI meetings

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Thank you.

